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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/567,360 | 09/25/2006 | Misa Hanita | Q93023 | 9859 |
| 23373 | 7590 | 03/17/2011 | EXAMINER | |
| SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | WOOD, ELLEN S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1782 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 03/17/2011 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/567,360 | Applicant(s) HANITA ET AL. | |
| | Examiner ELLEN S. WOOD | Art Unit 1782 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/22/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (JP 2002-241608, hereinafter "Kikuchi") in view of Takagi et al. (US 2003/0130405, hereinafter "Takagi").

Kikuchi discloses a container formed from an oxygen uptake nature resin composition [0001]. The resin combines a polyamide resin, an oxidizing organic component, and a transition metal system catalyst [0011]. The terminal amino group concentration is not more than 40 eq/10⁶g [0011]. The polyamide is derived from a xylylenediamine and a dicarboxylic acid component [0011]. The oxidizing organic components are a polymer derived from polyenes, especially an acid denaturation polyene system polymer [0011]. The transition metal system catalyst is carboxylate of cobalt [0011]. The oxidizing organic component contains 0.01-10% of the weight of the resin composition [0011]. The transition metal system catalyst is contained in a quantity of 100-3000ppm [0011]. The resin sheet can be laminated to another layer to form a multilayer structure [0035].

Kikuchi is silent with regards to the resin composition as the island portion in an island-in-the-sea structure with an additional resin component as the sea portion.

Takagi discloses a thermoplastic resin composition that has an island-and-sea micro structure constituted by component A and component B [0010]. Components A are amorphous thermoplastic resins and components B are crystalline thermoplastic resins [0013]. Component A is the island phase and component B is the sea phase in the micro structure [0047]. The examiner would like to note that component A of Takagi represents component B of the claimed invention and component B of Takagi represents component A of the claimed invention. Component A consists of amorphous polyamides [0015] where component B consists of thermoplastic resins such as PET [0037]. The size of the island phase is usually 0.1 to 10 μm in major diameter [0046]. The thermoplastic resin composition makes molded articles with excellent mechanical strength [0047]. Since the thermoplastic resin composition according to the present invention is provided with an island-and-sea micro structure by combining two different types of thermoplastic resin, the composition is improved in molding workability with no serious compromise in fluidity [0060].

It should be noted that the ratio of the whole surface area of the island portions of the oxygen absorbing functional component in the oxygen absorbing layers to the volume of the packing container is not smaller than 20 cm^{-1} is a result effective variable. As the ratio N/M decreases, the oxygen absorbing layers have decreased oxygen absorbing properties. Absent unexpected results, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the ratio (N/M) in the oxygen absorbing layers since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges

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involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). In the present invention one would have been motivated to optimize the ratio (N/M) in the oxygen absorbing layers in order to improve the oxygen absorbing properties and gas barrier properties of the containers, thus preventing oxygen to be dissolved in the contents of the containers.

It would be obvious to one of ordinary skill in the art to combine the island-and-sea micro structure of Takagi with the resin composition of Kikuchi, because the island-and-sea micro structure of Takagi enables a thermoplastic resin to have improved molding workability and excellent mechanical properties, thus producing a packing container, when Takagi and Kikuchi are combined, with excellent oxygen absorbing properties and processability.

Response to Arguments

3. Applicant's arguments filed 12/30/2010 have been fully considered but they are not persuasive.
4. The applicant argues that Takagi does not at all disclose or suggest forming many small islands in order to increase the total surface area of the island portions so that the ratio N/M exceeds 20. The applicant also argues that the position of the ratio N/M exceeding 20 as a result effective variable taken by the Examiner is not supported in the cited art.

In response, Kikuchi provides the general conditions for the parameter of the ratio N/M. Kikuchi discloses that while polyamide resin has oxygen barrier properties,

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these barrier properties degrade over time thus causing more oxygen to penetrate the contents of the bottle causing deterioration of the contents [0002]. Kikuchi discusses that by utilizing an oxidizing organic component, such as a polymer derived from polyenes [0018], the oxidizing organic component will provide additional oxygen uptake properties to the resin without reducing the barrier properties of the polyamide [0013]. Thus, it would be determined from the prior art that there is a general parameter in regards to relationship between the volume of the packing container and the surface area in which is saturated by the oxidizing organic component. Thus, when general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELLEN S. WOOD whose telephone number is (571)270-3450. The examiner can normally be reached on M-F 730-5 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ELLEN S WOOD/
Examiner, Art Unit 1782

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1782